



## Beyond Dobris: *A Continent Commits to Change*

In June 1991, 36 of Europe's environment ministers and deputies met at Czechoslovakia's Dobris Castle, near Prague, to discuss the environmental status of their nations. During the unprecedented conference, the ministers called for the preparation of a comprehensive report on Europe's extensive environmental problems. In August 1995, the European Environment Agency Task Force (a branch of the European Commission) published *Europe's Environment: The Dobris Assessment*, a 676-page review of the continent's environment.

Although the EC has published several environmental reports since 1972, the Dobris Assessment is the first to combine information from central and eastern Europe with that of western Europe and to place European environmental problems in a global context. Relying on data from a wide range of international, regional, and local sources, the report confirms what the environment ministers had broadly discussed: the environment in many parts of the continent, especially but not exclusively in Central and Eastern Europe, is of alarmingly poor quality.

Due in part to the elucidation of these problems by the Dobris report and a number of previous reviews, Europe's leaders are beginning to adopt transnational approaches for addressing the continent's woes. Although Europe has been notoriously slow to address environmental problems on a continentwide basis, recent action by the European Union's environment ministers may have created the foundation for broad-based improvements to environmental quality. In June 1995, the ministers adopted a series of directives aimed at integrating environmental standards among the 15 EU member countries. Ministers reached agree-

ment on common standards for pollution prevention, air and water quality, endangered species trade, and hazardous materials control. The directives provide the strongest environmental legislation that Europe has ever seen.

### The Dobris Assessment

The Dobris report defines Europe as the 46 countries or states ranging from Iceland in the north to Malta in the south, Portugal in the west to the Russian Urals in the east. The second smallest continent, Europe occupies 7% of the earth's land area. In 1995, the total European population (including the USSR) was 727 million, or 12.7% of the global total. More than 70% of Europeans live in densely populated urban areas.

Supported by detailed graphs, tables, and photographs, the massive report examines Europe's total environment including such diverse topics as air, inland waters, seas, soil, wildlife, human health, noise pollution, radiation, tourism, climate change, and chemical emissions and risk. Some of the findings of the report in these areas are briefly summarized below.

**Air.** The types and sources of air pollution problems in Europe vary greatly from region to region. While combustion of fossil fuels and industry are the main contributors in central and eastern European countries, vehicular emissions, primarily from large trucks transporting goods, are the principal source in western regions. For example, winter smog plagues those cities that continue to heat with coal, such as Odessa and Istanbul. But in the Nordic countries, suspended particles of grit caused by the extensive use of tires studded with metal have become a serious health hazard. Residents of Athens and Barcelona suffer from high levels of smog each summer because of vehicle emissions, hot weather, and a topography that traps air.

The report estimates that in 70–80% of European cities with more than 500,000 inhabitants, the air pollution levels of one or more pollutants exceed World Health Organization air quality guidelines at least once a year. Suspended particulate matter is the worst, provoking asthma and obstructive airway diseases.

Worldwide, Europe accounts for about 25% of all sulfur dioxide and nitrogen oxide emissions. The European contribution to global emissions of chlorofluorocarbons, which threaten the stratospheric ozone, is 35–40%. In addition, Europe is responsible for about 25% of global carbon dioxide and 16% of global methane emissions.

Through environmental regulations, western European countries have cut sulfur dioxide emissions by an average of 40%, but nitrogen oxide concentrations from vehicular emissions remain high. In the meantime, uncontrolled industrial emissions in eastern Europe have led to high sulfur dioxide concentrations that can exceed 1000 micrograms per cubic meter. The report cites nonferrous metal (cadmium and aluminum) industries and coal-fired power plants as the chief culprits. A primary air pollutant in the Netherlands and in part of the United Kingdom is ammonia, the result of intensive cattle breeding.

Transnational air pollution is one of the thorniest points for pan-European environmental policy makers. Industrial pollutants often migrate far from their sources, depositing acid on surface waters and terrestrial ecosystems thousands of miles away. For example, the atmospheric migration of heavy metal emissions from southern Europe is blamed for the high mercury content in Scandinavia's freshwater fish. The report does acknowledge, however, that the deposition and concentration of heavy metals have fallen since the 1970s, primarily because gasoline lead levels have been cut.



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**Water.** With its extensive farmlands, much of Europe's waters are contaminated by nitrate leached from manure and fertilizers, primarily in parts of Denmark, northern France, the Netherlands, Lithuania, and Belarus. About 600 different pesticides, herbicides, and fungicides are used in European agriculture, forestry, and horticulture, and run-off of these chemicals into water supplies threatens health. But with increased awareness of the dangers of pesticide pollution in drinking water, many farmers are now looking for better ways to manage pest control.

Groundwater is contaminated in many areas by organic and inorganic substances from industrial mining, military sites, and landfills. The Dobris Assessment estimates that between 47,000 and 95,000 square kilometers of land contain polluted groundwater. Exploitation of groundwater irrigation in certain areas, such as the Tables de Daimiel nature reserve in Spain, has led to destruction of wetlands.

The water quality of rivers in Europe varies extensively among its several million kilometers of rivers, with the highest quality in Iceland, Ireland, and Scotland and the lowest quality in Belgium, the Czech Republic, and Poland. Damage to rivers and lakes from surface water acidification has been documented for several decades and continues to be a problem.

In general, there is no water shortage problem in Europe, but usable water is unevenly distributed across the continent and aquifers are overexploited in an estimated 60% of the industrial and urban centers in Europe.

**Soil.** The most common toxic soil pollutants in Europe include metallic elements and their compounds, as well as organic chemicals. Over the last 20–30 years, European soils have become increasingly contaminated by cadmium from nonferrous industrial activities. Although European countries stopped using mercury compounds as fungicides in the 1960s and mercury emissions from industrial sources dropped to almost zero in the 1970s, accumulated mercury levels remain high, especially in forest soils. The report concludes that soil will act as a supplier of mercury “for a long time to come.”

Agricultural land accounts for more than 42% of the total land area in Europe. Because many farms in southern Europe are small, pastures tend to be overgrazed, leading to high soil erosion, especially in Portugal. Desertification has also begun in countries along the Mediterranean Sea, such as Spain, where growing populations and land use are damaging the fragility of natural resources.

**Human health.** The environmental health of populations varies across Europe. Surveys show that the residents of Sweden and Norway are the most satisfied with their health, while residents of Poland and Hungary score their health the worst. The average life expectancy in Iceland is nearly 78, whereas it hovers around 69 in the former Soviet Union. Asthma is on the rise in many areas; the report estimates that as many as 15% of asthma cases in the urban European population are possibly related to prolonged exposure to high concentrations of particulates. Because of a lack of comprehensive environmental health data, the report only concludes that a number of environmental factors “probably” adversely affect the health of Europeans.

### New Standards

Although the Dobris Assessment presents the evidence of environmental degradation and health problems, it does not have the power to address these issues. Developing regulations and transnational agreements to remediate Europe's environment and set standards for maintaining its quality rests with the governing bodies of the EU. The original treaties creating the single European market in the 1950s did not even mention the environment, and although the EU has adopted a series of “action programs” on the environment, member nations' responses to the rules proposed by those programs have been mixed because control mechanisms have been nonexistent. At the June meeting, the EU's environment ministers set in motion a number of directives to harmonize regulations and bolster their implementation.

While the new environmental attention embodied in the ministers' proposal reflects a concern for European environmental resources per se, it also results from the needs of industry for more uniform compliance requirements. According to Herman H. Koeter, principal administrator of the Environmental Health and Safety Program of the Organization for Economic Cooperation and Development (OECD) in Paris, environmental rules and regulations vary widely among EU nations. Integration is an important step, Koeter said, because “countries place emphasis on the impact of chemicals on the environment, and when countries do that in different ways, industry may end up having to cope with all kinds of different tests, requirements, and assessments when they export or produce a product in different countries. One of the basic principles behind all our work is to avoid nontariff trade barriers [from] being developed, to avoid industry [from settling] into particular areas, and so forth. So there is

quite a strong economic push behind all this activity.”

Key among the conclusions from the ministers' two-day summit in Luxembourg was a directive on integrated pollution prevention and control, which emphasizes a coordinated approach to setting emission limits. “It will encourage the development of clean technologies to achieve overall environmental benefits and is a radical and major step forward from the ‘end of the pipe’ approach and single-medium regulation,” said the United Kingdom's Environment Secretary John Gummer.

According to Gummer, the integration directive applies to the largest, most polluting plants and requires them to be issued with permits that will be based on “best available techniques” for purposes of achieving high levels of protection for the environment as a whole. That is, the directive specifies the production levels at which the rules will begin to apply.

EU member nations have three years to comply with the directive. When they do, the directive provides an eight-year transition period for existing industries. At the same time, it requires that no new industrial facilities be built without guarantees that they will follow the directive.

A second integration directive was designed to create a framework for tackling air pollution across Europe. While identifying 13 specific pollutants for subsequent reduction via the establishment of numerical goals, the directive currently seeks to establish general reduction of air pollution. To achieve generalized reduction, the ministers settled on a framework that includes the setting of air quality levels and the use of common testing methods and criteria. The directive also creates a schedule for the EC (the body with the formal and exclusive power to initiate, administer, and enforce all EU legislation and represent the interests of the EU as a whole) to establish maximum acceptable levels for specific pollutants. By 31 December 1996, the EC is to have completed unified lists for sulfur dioxide, nitrous oxides, lead, black smoke, and suspended particulate matter. The EC has a 31 December 1999 deadline for specifying levels for benzene, polyaromatic hydrocarbons, carbon monoxide, cadmium, arsenic, nickel, mercury, and fluoride.

Once maximum acceptable values and warning levels for air pollutants are established, member states are to evaluate their air quality as soon as possible. They are also expected to establish short-term mitigation plans, such as reduction of automobile traffic, when those levels are exceeded. The directive also specifies that in areas where the pollutant levels are below the



designated levels, those acceptable levels must be maintained.

The environment ministers also addressed the issue of water quality by calling for simplified laws and public meetings to define and develop the principles of an EU water policy. Possible future directives in this area that were discussed include requiring member states to issue water quality objectives, install water quality monitoring equipment, and improve integrated water quality programs.

The ministers also agreed to continue their efforts to ban exports of toxic hazardous wastes to developing countries through negotiations at the Third Conference of the Parties to the 1990 Basel Convention. At that meeting, held in late September, such an amendment was adopted.

A topic that received significant attention from the ministers was protection of endangered species. Tough new laws to tighten the trade in endangered species were enacted following the Luxembourg meeting and a ruling for stricter application of the 1982 Convention for International Trade in Endangered Species. The

ruling established four species protection levels, the most restrictive of which prohibits all trade. Depending on the species' threat of extinction, their entry into a country will be restricted at various levels. The exportation of these species will be subject to even more stringent attention, the ministers ruled. The new regulations cover more than 24,000 species of animals, birds, and plants.

In a July meeting, the EU's environment committee voted to integrate policies to protect both the environment and human health through programs to address the link between poverty, population, and environmental degradation. The committee recommended that member nations devote \$400 million annually to such programs by the year 2000.

The Dobris Assessment and the recent regulations are a continuation of ongoing efforts by the EU to assess and address environmental and health issues through research and regulation. A new research program by the European Commission called "Environment and Climate 1994-1998" is currently being developed to further aid in this effort. The new pro-

gram follows the STEP and Environment Research Programmes that have "contributed significantly to increasing the scientific validity of the regulatory approaches established under EU legislation," according to an EC ecosystems research report. Projects within these programs have covered a broad range of environmental and health topics within a framework of examining their impact on global change, technologies and engineering, economic and social aspects of environmental issues, and technological and natural risks. Existing projects under these programs will continue until as late as 1997 while new projects are expected to begin in late 1995. According to the EC report, the new program will focus on "areas where the existence of European networks, the joint use of infrastructure and national research capabilities, and the coordination and integration of member states' research are liable to be most effective" in enhancing understanding of global environmental problems.

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